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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 12/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/613,997

Applicant(s)

MAHR, PETER

Examiner

Michael V Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,4-7,11-14 and 18 is/are rejected.
- 7) ☐ Claim(s) 8-10 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see page 10, filed November 3, 2003, with respect to the specification have been fully considered and are persuasive. The objection to the specification has been withdrawn.
2. Applicant's arguments, see page 10, filed November 3, 2003, with respect to claim objections have been fully considered and are persuasive. The objections to claims 1 and 3 have been withdrawn.
3. Applicant's arguments, see page 11, filed November 3, 2003, with respect to rejections under 35 U.S.C. 112, first paragraph have been fully considered and are persuasive. The rejections of claims 1 and 3 under 35 U.S.C. 112, first paragraph have been withdrawn.
4. Applicant's arguments, see pages 11-12, filed November 3, 2003 with respect to rejections under 35 U.S.C. 102(e) as being anticipated by Kubo et al. (US 6,236,630) have been fully considered but they are not persuasive. The applicant argues that Kubo et al. discloses two circuits for speed processing. However, the speed processor of Kubo et al. meets the claim language because the examiner interprets the motor servo and driver circuit of Kubo et al. (Fig. 3, element 8) as a single speed processor for controlling speed in either constant linear velocity or constant angular velocity. Furthermore, the examiner notes that use of more than one speed processor is not excluded in the claim language of claim 5 or claim 12 and that the solution offered by Kubo et al. also calculates and provides an adapted determined rotation speed value depending on the mode of operation (see switch 89 in Fig. 3).

***Claim Objections***

5. Claims 7 and 14 are objected to because of the following informalities:
- a. On line 1 of claims 4, 6-11, and 13-18, the examiner suggests replacing "Optical disc player or recorder" to -Disc speed control device- to be consistent with the preamble of the independent claims.
  - b. On line 4 of claims 7 and 14, the examiner suggests replacing "which may occur" with -when-. The examiner will interpret the claims as positively claiming that the speed processor outputs a constant value when in the conditions set by the claims.
- Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4-7, 11, 12-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (hereafter Kubo) (US 6,236,630) in view of admitted prior art.

In regard to claim 5, Kubo discloses a disc speed control device for use in a player or recorder of a disc shaped information carrier to read or record data along data tracks, the data being read or recorded using a pick-up, the device comprising: disc actuating means for rotating the disc in a first mode at a constant linear velocity or a second mode at a constant angular velocity (Fig. 1, element 5); the pick-up for reading the data from the rotating disc and producing an output

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signal representative of scanned data from the rotating disc (Fig. 1, element 6); frequency generating means for generating a rotation speed frequency representative of a rotation speed of the rotating disc (Fig. 1, element 73); signal processing means for processing the output signal of the pick-up and creating a data frequency signal, the data frequency signal being related to a frequency at which the data is scanned by the pick-up (Fig. 1, elements 9-11 and 14); and a speed processor for receiving the data frequency signal and computing a determined rotation speed value for said first mode and said second mode wherein in the first mode the determined rotation speed value further depends on a location of the rotating disc at which the pick-up scans the data (Fig. 1, element 8). Kubo does not disclose a speed servo means for receiving the rotation speed frequency signal and the determined rotation speed value and for regulating the disc actuating means in response to the determined rotation speed value.

The admitted prior art of Fig. 1 discloses a speed servo means for receiving the rotation speed frequency signal and the determined rotation speed value and for regulating the disc actuating means in response to the determined rotation speed value (Fig. 1, element 3). The examiner notes that the speed servo means of admitted prior art drives the disc actuating means using the difference between the target rotation speed and the actual rotation speed while the disc actuating means of Kubo is driven by the target rotation speed regardless of any difference between the target rotation speed and the actual rotation speed. If the rotation speed frequency signal that is indicative of the actual rotation speed is used as feedback, the target rotational speed will be reached more accurately.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the speed servo means of Kubo with the speed servo means of admitted prior art that receives a rotation speed frequency signal, the motivation being to use the

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rotation speed frequency signal that is indicative of the actual rotation speed as feedback to reach the target rotation speed provided by the determined rotation speed value more accurately.

In regard to claim 2, Kubo discloses that the signal processing means comprises a data phase locked loop means which outputs a voltage corresponding to a phase locked loop frequency of a the rate at which the data is read by the pick-up (Fig. 1, element 11 and Fig. 3, element 81), and a reference voltage source which delivers a reference voltage at an input of the speed processor (Fig. 1, elements 14 and 71).

In regard to claim 6, Kubo in view of admitted prior art discloses that the speed servo means which receives the determined rotation speed value, the disc actuating means, and the frequency generating means form a first loop (Fig. 1, elements 5 and 73 of Kubo and Fig. 1, element 3 of admitted prior art); and further comprising: a second loop which provides the determined rotation speed value to an input of the first loop and which provides processing of the data frequency signal in the first mode (Fig. 1, elements 6 and 9-11 and Fig. 3, elements 8a, 8b, and 89).

In regard to claim 7, Kubo discloses the second loop processes: a constant speed value (Fig. 3, element 95) wherein the speed processor outputs a constant value for the determined rotation speed value which may occur in a start phase when the disc is inserted in the player or the recorder, or in the second mode when the player or the recorder is used as a CD-ROM drive (Fig. 4).

In regard to claim 11, Kubo discloses that the second loop comprises: a data phase locked loop which receives the output signal from the pick-up (Fig. 1, elements 9-11 and 14 and Fig. 3, element 81), the data phase locked loop comprising: means for generating a voltage depending on a frequency of a read data rate which is defined as a phase locked loop frequency, a voltage curve

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having a correspondence between phase locked loop frequencies and said voltage, and an output of said voltage according to said voltage curve (Fig. 3, element 81); and said speed processor (Fig. 3, element 8 excluding elements 81-82) which receives at its input said output by the data phase locked loop and a reference voltage both of which are compared and, depending on a result of the comparison, outputs a higher or smaller determined rotation speed value (Fig. 3, elements 81-83). The examiner notes that a frequency to voltage converter inherently outputs a voltage according to a voltage curve having a correspondence between phase locked loop frequencies.

In regard to claim 12, Kubo discloses a disc speed control device for use in a player or recorder of a disc shaped information carrier to read or record data along data tracks, the data being read or recorded using a pick-up, the device comprising: disc actuator which rotates the disc in a first mode at a constant linear velocity or a second mode at a constant angular velocity (Fig. 1, element 5); the pick-up which reads the data from the rotating disc and produces an output signal representative of scanned data from the rotating disc (Fig. 1, element 6); frequency generator which generates a rotation speed frequency representative of a rotation speed of the rotating disc (Fig. 1, element 73); signal processor which processes the output signal of the pick-up and creates a data frequency signal, the data frequency signal being related to a frequency at which the data is scanned by the pick-up (Fig. 1, elements 9-11 and 14); and speed processor which receives the data frequency signal and computes a determined rotation speed value for said first mode and said second mode wherein in the first mode the determined rotation speed value further depends on a location of the rotating disc at which the pick-up scans the data (Fig. 1, element 8). Kubo does not disclose a speed servo which receives the rotation speed frequency signal and the determined rotation speed value and which regulates the disc actuating means in response to the determined rotation speed value.

The admitted prior art of Fig. 1 discloses a speed servo which receives the rotation speed frequency signal and the determined rotation speed value and which regulates the disc actuating means in response to the determined rotation speed value (Fig. 1, element 3). The examiner notes that the speed servo of admitted prior art drives the disc actuating means using the difference between the target rotation speed and the actual rotation speed while the disc actuating means of Kubo is driven by the target rotation speed regardless of any difference between the target rotation speed and the actual rotation speed. If the rotation speed frequency signal that is indicative of the actual rotation speed is used as feedback, the target rotational speed will be reached more accurately.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the speed servo of Kubo with the speed servo of admitted prior art that receives a rotation speed frequency signal, the motivation being to use the rotation speed frequency signal that is indicative of the actual rotation speed as feedback to reach the target rotation speed provided by the determined rotation speed value more accurately.

In regard to claim 4, Kubo discloses that the signal processor comprises a data phase locked loop which outputs a voltage corresponding to a phase locked loop frequency of a rate at which the data is read by the pick-up (Fig. 1, element 11 and Fig. 3, element 81), and a reference voltage source which delivers a reference voltage at an input of the speed processor (Fig. 1, elements 14 and 71).

In regard to claim 13, Kubo in view of admitted prior art discloses that the speed servo which receives the determined rotation speed value, the disc actuator, and the frequency generator form a first loop (Fig. 1, elements 5 and 73 of Kubo and Fig. 1, element 3 of admitted prior art); and further comprising: a second loop which provides the determined rotation speed value to an



input of the first loop and which provides processing of the data frequency signal in the first mode (Fig. 1, elements 6 and 9-11 and Fig. 3, elements 8a, 8b, and 89).

In regard to claim 14, Kubo discloses that the second loop processes: a constant speed value (Fig. 3, element 95) wherein the speed processor outputs a constant value for the determined rotation speed value which may occur in a start phase when the disc is inserted in the player or the recorder, or in the second mode when the player or the recorder is used as a CDROM drive (Fig. 4).

In regard to claim 18, Kubo discloses that the second loop comprises: a data phase locked loop which receives the output signal from the pick-up (Fig. 1, elements 9-11 and 14 and Fig. 3, element 81), the data phase locked loop comprising: means for generating a voltage depending on a frequency of a read data rate which is defined as a phase locked loop frequency, a voltage curve having a correspondence between phase locked loop frequencies and said voltage, and an output of said voltage according to said voltage curve (Fig. 3, element 81); and said speed processing means (Fig. 3, element 8 excluding elements 81-82) which receives at its input said output by the data phase locked loop and a reference voltage both of which are compared and, depending on a result of the comparison, outputs a higher or smaller determined rotation speed value (Fig. 3, elements 81-83). The examiner notes that a frequency to voltage converter inherently outputs a voltage according to a voltage curve having a correspondence between phase locked loop frequencies.

#### *Citation of Relevant Prior Art*

7. Matsui et al (US 6,259,662) discloses operating in a constant linear velocity mode when a data frequency signal is compromised. Arataki (US 5,825,732) discloses determining a rotation

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speed mode of operation based upon whether or not a data frequency signal is locked (Fig. 1).

Naito (US 4,679,181) discloses a rotation speed control mode in which the rotation speed is held constant (Fig. 2B). Shirane (US 5,412,629) discloses a speed servo which receives the rotation speed frequency signal and the determined rotation speed value and which regulates the disc actuating means in response to the determined rotation speed value (Fig. 2, element 6'). Kamoto et al (US 5,712,836) discloses the inner loop of the claimed invention (Fig. 6, elements 2-6).

Kanamara (US 4,855,978) discloses a speed processor that computes a determined rotation speed value for two modes and a speed servo that receives a rotation speed frequency and the determined rotation speed value (Fig. 1).

*Allowable Subject Matter*

8. Claims 8-10 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regard to claims 8 and 15, none of the references of record alone or in combination disclose or suggest a disc speed control device with a second loop, which provides a determined rotation speed value to an input of a first loop and which provides a data frequency signal in a constant linear velocity mode, also **freezes an instantaneous speed in the event of error** wherein the speed processor registers an absence of the data frequency signal and **outputs the determined rotation speed value which was stored previous to the occurrence of the error to control the disc actuating means until the pick-up scans readable data and the data frequency signal is generated again.**

*Conclusion*


9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
Michael Battaglia



W. R. YOUNG  
PRIMARY EXAMINER